

# Exhibit B

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IN THE UNITED STATES DISTRICT COURT FOR THE  
EASTERN DISTRICT OF VIRGINIA  
Alexandria Division

UNITED STATES OF AMERICA, <i>et al.</i> ,	)	
	)	
Plaintiffs,	)	
	)	
v.	)	1:23-cv-108 (LMB/JFA)
	)	
GOOGLE LLC,	)	
	)	
Defendant.	)	

EXPERT REPORT OF DR. THOMAS S. RESPESS III



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THOMAS S. RESPESS III

December 22, 2023

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damages to the United States in the form of supracompetitive fees charged to U.S. government agencies.<sup>2</sup>

15. The United States has asked me to quantify the amount of overcharges to advertisers and publishers generally and damages to the following eight government agencies (“Federal Agency Advertisers” or “FAAs”) from January 25, 2019 through January 24, 2023 (“Damages Period”):

- Three Department of Defense (“DOD”) agencies:
  - Army
  - Navy
  - Air Force
- Five additional agencies:
  - United States Postal Service (“USPS”)
  - Census Bureau (“Census”)
  - Department of Veterans Affairs (“VA”)
  - National Highway Traffic Safety Administration (“NHTSA”)
  - Centers for Medicare & Medicaid Services (“CMS”)

16. In calculating damages incurred by the FAAs, I assume that Google has violated the antitrust laws as alleged in the amended complaint in this action. I have not been asked to independently evaluate the legal claims in this matter. I have not formed any opinion regarding the legal claims, nor have I performed any legal analysis in my report.

17. My analysis relies in part on the opinions of another expert retained by the United States in this matter, Dr. Timothy Simcoe, regarding the alternative percentage that Google’s ad exchange would have retained from advertisers who purchased display advertisements on the open web absent Google’s anticompetitive conduct alleged in the amended complaint (“AdX But-For Take Rate”). While I have reviewed Dr. Simcoe’s analysis, I do not purport to independently evaluate that analysis, but rather use it as an input to calculate overcharges and advertiser damages.

18. The United States has also asked me to analyze the profitability of aspects of Google’s display advertising product area. I understand that another expert, Dr. Robin Lee, may rely on my profitability analyses in forming his opinions.

19. I performed my analyses and reached the opinions and conclusions contained in this report by analyzing the available data and documents in this matter. I have applied standard and well-

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<sup>2</sup> *Id.* at ¶¶ 262-78, 340-41.

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known accounting methods and techniques used to measure damages and profitability. I have also drawn on my education, professional training, and experience in finance, accounting, and damages.

20. A list of documents that I have relied on in forming my opinions is attached as **Appendix B**. I understand that discovery in this matter is ongoing, and that Google will be providing reports from its experts. Thus, although I do not anticipate that my conclusions will change in any material way, I reserve the right to modify or supplement my conclusions as additional information is made available to me, or as I perform further analysis.

21. I am being compensated for my work in this matter at a rate of \$600 per hour. Staff at The Brattle Group (“Brattle”) have assisted me by performing work at my direction. All the opinions and conclusions stated in this report are my own. Neither Brattle’s compensation nor my compensation is contingent on my opinions, testimony, or the outcome of this matter.

### III. Summary of Opinions

#### A. ADX OVERCHARGES AND DAMAGES TO FAAs

22. My analysis of overcharges borne by publishers and advertisers includes overcharges on transactions that flowed through Google’s advertising exchange, AdX, from Google’s demand side platform (“DSP”), Display & Video 360 (“DV360”), and its Google Ads products. I calculate that Google overcharged worldwide advertisers and publishers an amount ranging from [REDACTED] to [REDACTED] during the Damages Period. I similarly calculate that the overcharge to advertisers based in the United States and their publishers and to U.S. government agencies and their publishers ranges from [REDACTED] to [REDACTED] and from [REDACTED] to [REDACTED], respectively.

23. My analysis of damages borne by FAAs includes AdX and platform fee overcharges on transactions that flowed through AdX from DV360, Google Ads, and The Trade Desk (“TTD”). Google overcharged the FAAs a total of [REDACTED] assuming a [REDACTED] AdX But-For Take Rate, [REDACTED] assuming a [REDACTED] AdX But-For Take Rate, and [REDACTED] assuming a [REDACTED] AdX But-For Take Rate.

24. DSPs and Google Ads charge what are called platform fees based on the amounts of an advertiser’s spend that flow into AdX. As a result of the alleged AdX overcharge, the FAAs also paid more in platform fees to DSPs (DV360 and TTD) and Google Ads. **Figure 1** below summarizes damages to the FAAs from both the AdX overcharge and platform fees overcharge, and prejudgment interest thereon. Total damages range from [REDACTED] to [REDACTED].

38. In this section, I discuss how I narrowed down the data available to me to the relevant transactions for my damages analysis. I first discuss the data that Google provided and how I applied filters to it to focus on transactions in the Relevant Product Markets. I then discuss how the FAAs purchased display ads from Google through various ad agencies. I refer to each unique combination of FAA and ad agencies as an “FAA Purchase Pathway.” I discuss how I calculated damages for transactions in the Relevant Product Markets only for certain of the various FAA Purchase Pathways.

[REDACTED]. TTD also produced [REDACTED]  
[REDACTED] (“TTD Data”). In this section, I explain how I identified the relevant portions of RFP60 Data and TTD Data that I use in my damages analysis.

<sup>22</sup> These productions contain data including

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40. In order to narrow the data to those transactions in the scope of my damages analysis, I have applied filters to the RFP60 Data that are consistent with the relevant markets at issue in this matter. The RFP60 Data have variables which identify [REDACTED]

[REDACTED]. I use [REDACTED]  
[REDACTED] to narrow the transactions down to the Relevant Product Markets:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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<sup>23</sup> Expert Report of Dr. Timothy Simcoe, December 22, 2023 (“Simcoe Report”), ¶ 63. (“Professor Lee’s Report defines a set of relevant antitrust markets for publisher ad servers, ad exchanges, and advertiser ad networks. I have reviewed his analysis and adopt his conclusion that these are relevant antitrust markets for the purpose of assessing Google’s alleged anticompetitive conduct. I also adopt Professor Lee’s conclusion that Google has substantial and sustained market power in the market for each of these ad tech tools.”); *see also*, Lee Report, Section IV.D, wherein Professor Lee states that for exchange market shares he includes open auction and private auction, among others.

<sup>24</sup> Letter from David Pearl to Kelly Garcia, July 7, 2023, [REDACTED]

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41. **Figure 5** shows variables in the RFP60 Data, the available filters on those variables, and the filters I chose in order to isolate transactions in the Relevant Product Markets. The bolded items represent the filters I chose for my analysis.

**Figure 5: DV360 and Google Ads Product Market Filters<sup>25</sup>**









Sources: DV360 Xbridge Monthly Data and Google Ads Monthly Data.

42. **Figure 6** shows variables in TTD Data, the available filters on those variables, and the filters I chose for the same reasons I filtered the RFP60 Data. [REDACTED]

25

Category	Item	Value	Unit
Category 1	Item 1.1	10	kg
	Item 1.2	20	kg
	Item 1.3	30	kg
	Item 1.4	40	kg
	Item 1.5	50	kg
Category 2	Item 2.1	15	kg
	Item 2.2	25	kg
	Item 2.3	35	kg
	Item 2.4	45	kg
	Item 2.5	55	kg
Category 3	Item 3.1	20	kg
	Item 3.2	30	kg
	Item 3.3	40	kg
	Item 3.4	50	kg
	Item 3.5	60	kg
Category 4	Item 4.1	25	kg
	Item 4.2	35	kg
	Item 4.3	45	kg
	Item 4.4	55	kg
	Item 4.5	65	kg

43. **Figure 7** below shows the dollar amounts of FAAs' open web display transactions through DV360, Google Ads, and TTD. The FAAs' open web display purchases through DV360/Google Ads/TTD and AdX during the Damages Period was [REDACTED].

AdX			
			
			



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**B. MY DAMAGES ANALYSIS INCLUDES MULTIPLE FAA PURCHASE PATHWAYS**

44. The FAAs purchased display ads from Google using various ad agencies.<sup>26</sup> Some of those ad agencies engaged other ad agencies, such as related entities (parent, subsidiary, or sister companies) or subcontractors, to execute the FAAs' ad purchases. I refer to the first group, with whom the FAAs contracted, as "prime ad agencies," and the second group as "sub ad agencies."

45. I identified FAAs in the RFP60 Data and TTD Data and then identified specific combinations of FAAs and ad agencies. The RFP60 Data include variables called

[REDACTED]

46. The RFP60 Data also include variables called [REDACTED]

[REDACTED]

47. I refer to each unique combination of FAA, prime ad agency, and (as applicable) sub ad agency as an "FAA Purchase Pathway." For example, for DV360, USPS used Universal McCann as its prime ad agency, and Universal McCann used Matterkind (an affiliate owned by the same

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<sup>26</sup> See, e.g., USAF-ADS-0000771835 (contract number FA300218D0008 between the Air Force and GSD&M); USAF-ADS-0000414286, at -286-322.

<sup>27</sup> [REDACTED]

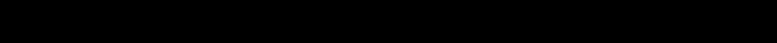
<sup>28</sup> [REDACTED]


<sup>29</sup> [REDACTED]

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parent entity, IPG) as a sub ad agency. The combination of “USPS | Universal McCann | Matterkind” is a unique FAA Purchase Pathway. The ad agencies listed in an FAA Purchase Pathway reflect the ad agencies involved, in one way or another, in assisting the FAA in purchasing advertising from Google.<sup>30</sup>

48. **Figure 8, Figure 9, and Figure 10** below summarize the FAA Purchase Pathways for DV360, Google Ads, and TTD, respectively, which I include in my damages analysis. I assign each FAA Purchase Pathway a “Short Name” and a “Reference Name” for ease of reference. I base the Short Name on the values in the Advertiser Identifier Variables, the values in the Ad Agency Identifier Variables, information from Google invoices, and information from ad agency invoices or other invoice data.<sup>31</sup>

49. The gray cells in **Figure 8** indicate values where I omit additional information for purposes of pathway identification because 




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<sup>30</sup> My use of the word “Purchase” in the defined term FAA Purchase Pathway refers to the FAAs’ purchase of advertising through AdX and does not indicate any particular financial arrangement or sequence of financial arrangements among an FAA and ad agencies.

<sup>31</sup> For FAA Purchase Pathways VA.1 and VA.2, the VA worked with both J. R. Reingold and DCG on different campaigns. Based on invoices, DCG used J.R. Reingold’s DV360 “seat” for purchases. *See* VET-AF-ADS-0000377196, at -206.

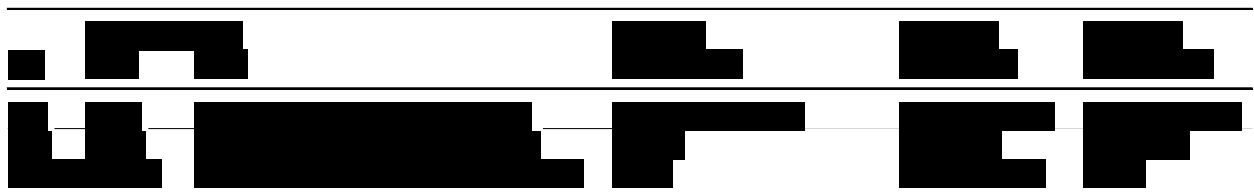
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Figure 8: [REDACTED]



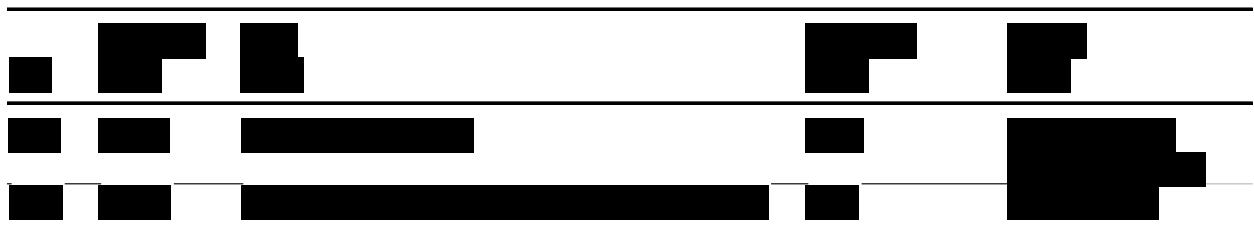
Sources: [REDACTED]

Figure 9: [REDACTED]



Source: XP Daily Monthly Data.

Figure 10: FAA Purchase Pathways through TTD Included in Damages Analysis



Sources: [REDACTED]

50. [REDACTED]

<sup>32</sup> Advertiser Division Name comes from DV360 XBridge Monthly Data whereas the columns DV360 Advertiser Name and DV360 Partner Name come from DV360 Monthly Data. The data from DV360 Monthly Data may have more specifics on campaign names.

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██ The United States also asked me to exclude certain FAA Purchase Pathways.<sup>33</sup> These exclusions result in a more conservative estimate of damages.

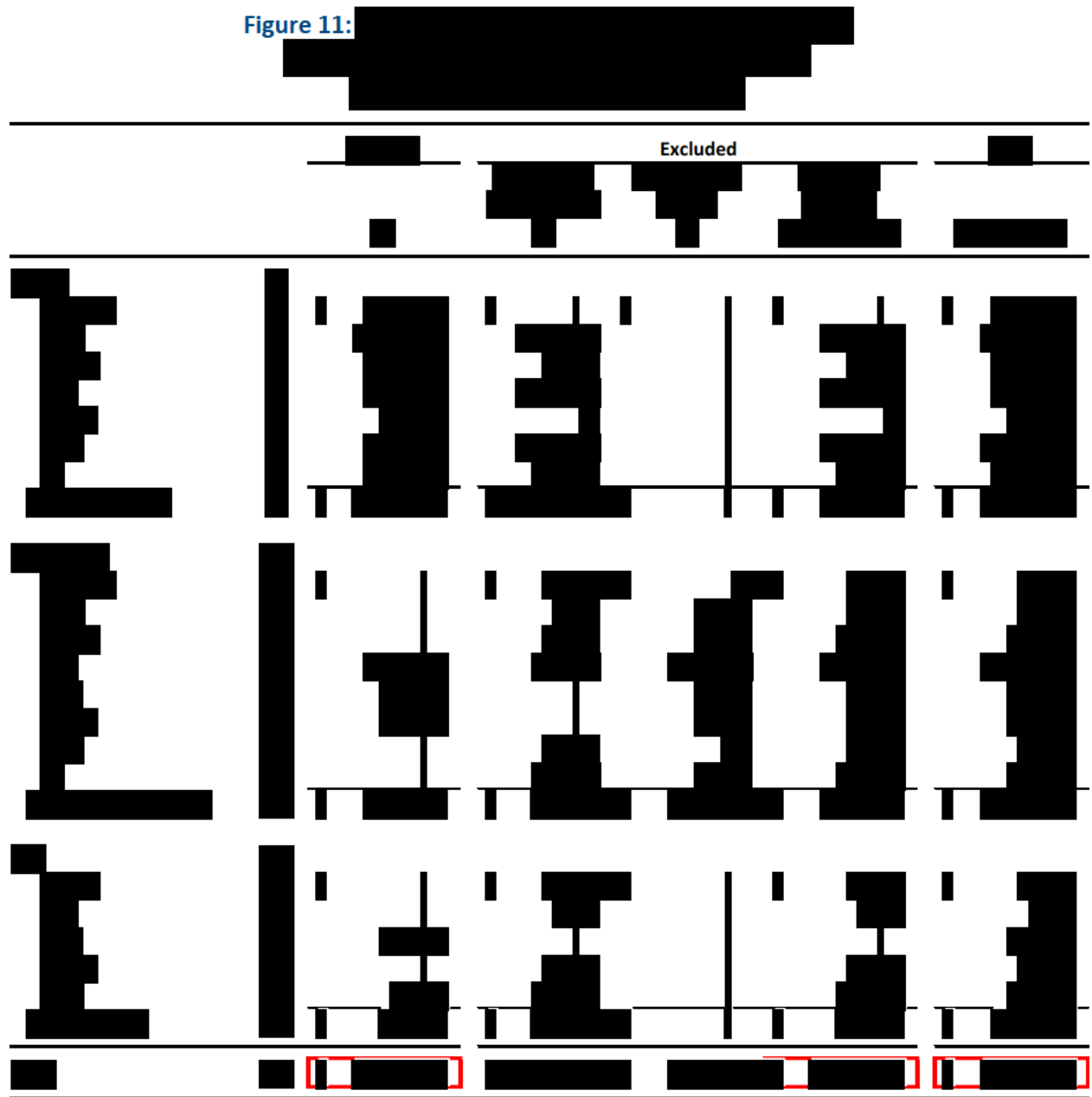
51. **Figure 11** below shows the amounts of FAA Purchase Pathways included and excluded from my damages analysis. (Each row in **Figure 11** can contain multiple pathways.) In total, I include approximately ██████████ and exclude approximately ██████████ of the FAAs' total advertising spend of approximately ██████████ on open web display advertising that went through DV360/Google Ads and AdX. These figures are shown in red boxes in **Figure 11**.

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<sup>33</sup> For the USPS | Universal McCann | Matterkind | Google pathway, the United States has instructed me to remove amounts billed for services in 2019 and 2020 from damages, a total of ██████████. For the USPS | Universal McCann (IPG) | Matterkind | TTD pathway, the United States has instructed me to remove amounts billed for services in 2019 and 2020 from damages, a total of approximately ██████████.

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Figure 11:



Sources:

[Redacted text block]

<sup>34</sup> Data for this table has been filtered in the same manner as for **Figure 7**.

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## VII. AdX Overcharges and Damages to FAAs

### A. OVERVIEW OF DAMAGES TO FAAs

52. In this section, I explain the calculations of my damages analysis. Damages to the FAAs comprise two components. First, the FAAs have suffered damages arising from the supracompetitive fees that AdX charged publishers and advertisers as a whole (“AdX Overcharge”). Second, the FAAs have suffered damages arising from platform fees (“Platform Fees Overcharge”). I can express the FAAs’ damages in a simple equation as follows:

$$\text{Total Damages to FAAs} = \text{AdX Overcharge} + \text{Platform Fees Overcharge}$$

53. Below I explain my calculations of the AdX Overcharge and the Platform Fees Overcharge.

#### 1. Overview of AdX Overcharge

54. On September 29, 2023, Google produced [REDACTED]

55. I have reviewed (1) RFP76 Data and Google’s invoices to prime and sub ad agencies, (2) RFP60 Data, (3) contracts and task orders related to the FAAs’ purchases, (4) prime ad agency invoices to FAAs and sub ad agency invoices to prime ad agencies, and (5) invoicing and payment data from FAAs and ad agencies. The last category includes information about invoices from prime ad agencies to FAAs as well as invoices from sub ad agencies to prime ad agencies.

56. For each FAA Purchase Pathway except CMS.1, CMS.2, NHTSA.1, and NHTSA.2, I selected a number of transactions of open web display advertising and confirmed that the FAA paid for those transactions. [REDACTED]

35

[REDACTED] See Letter from David Pearl to Kelly D. Garcia, September 29, 2023. I refer to this data collectively as “RFP76 Data.”

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[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] For CMS.1, CMS.2, NHTSA.1, and NHTSA.2, I have included these pathways based on instruction from the United States.

57. The ad agencies charged the FAAs fees for their services separate and apart from amounts charged by Google (and other advertising vendors). I do not include these fees in the payments to Google on which I base my damages analysis.

58. Monies that flowed from advertisers to AdX less the monies that AdX paid to publishers equal the amount retained by AdX (“AdX Actual Take”).<sup>37</sup> But for Google’s allegedly anticompetitive conduct, AdX would have retained a smaller amount (“AdX But-For Take”). The excess of the AdX Actual Take over the AdX But-For Take equals the AdX Overcharge borne by both publishers and advertisers. I can express my calculation of the AdX Overcharge in the following formula:

$$\text{AdX Overcharge} = \text{AdX Actual Take} - \text{AdX But-For Take}$$

59. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

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<sup>36</sup> In the text and figures in the body of this report, when describing a pathway, I start with the names of the FAAs and finish with the DSP or Google Ads. In **Appendix E**, I reverse this order, *i.e.*, I start each pathway with Google and finish with an FAA so as to link a Google’s invoice to the FAA’s payment.

<sup>37</sup> The term “take” refers to the dollar amount taken by AdX. The term “take rate” refers to the amount, on a percentage basis, that AdX “takes” from the amount spent by an advertiser—for example, if AdX has a take rate of 20 percent, that means that for every \$100 that flowed to AdX, AdX “takes” \$20 of it as its fee for brokering a deal between the buyer (advertiser) and seller (publisher).

<sup>38</sup> These credits include things like invalid traffic, explained here, overages, and other types of adjustments.

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

60. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] I understand that

Dr. Simcoe has estimated the take rate that AdX would have retained but for its alleged anticompetitive conduct (“AdX But-For Take Rate”).<sup>40</sup> In the alternative, the United States has

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39

[REDACTED]

[REDACTED]

[REDACTED]

<sup>40</sup> Simcoe Report, Figure 22.



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asked me to assume an additional possible AdX But-For Take Rate of 10 percent.<sup>41</sup> I calculate the dollar amount of the AdX But-For Take using AdX But-For Take Rates estimated by Dr. Simcoe, or the 10 percent rate as requested by the United States.<sup>42</sup> I do this by multiplying AdX Revenues by the AdX But-For Take Rate as follows:

$$\text{AdX But-For Take} = \text{AdX Revenues} \times \text{AdX But-For Take Rate}$$

61. Finally, I rely on Dr. Simcoe's estimate of the percentage of the AdX Overcharge borne by advertisers ("Advertiser Share") as opposed to publishers, which is 19.3 percent.<sup>43</sup> I calculate the AdX Overcharge to the FAAs as follows:

$$\text{AdX Overcharge to FAAs} = \text{AdX Overcharge} \times 19.3\%$$

62. I first calculate (i) the AdX Overcharge to advertisers and publishers worldwide, (ii) the AdX Overcharge to advertisers and publishers in the U.S., and (iii) the AdX Overcharge to U.S. Government agencies and the publishers on which their advertisements were displayed. I then calculate (iv) the AdX Overcharge to the FAAs specifically. The latter equals the first category of damages to the FAAs.

## 2. Overview of Platform Fees Overcharge

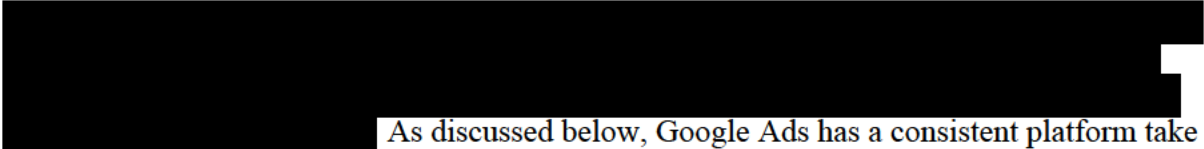
63. DSPs and Google Ads charge what are called platform fees based on the amounts of an advertiser's spend that flows into AdX.<sup>44</sup> As a result of the alleged AdX Overcharge, the FAAs

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<sup>41</sup> As instructed by the United States, in **Appendix D**, I have calculated the damages that would be owed by Google for a range of AdX But-For Take Rate percentages.

<sup>42</sup> My damages estimates are conservative because I do not reduce Dr. Simcoe's AdX But-For Take Rates nor the 10 percent rate requested by the United States by any discounts that publishers may have been negotiated relative to those rates. That is, further discounts from these rates are not included in my damages calculations.

<sup>43</sup> Simcoe Report, Figure 21, column [E], middle value. This amount captures only the direct effect from Dr. Simcoe's model and excludes indirect (equilibrium) effects of a change in the AdX take rate. Therefore, my damages calculations are conservative.

<sup>44</sup>  As discussed below, Google Ads has a consistent platform take embedded in its fee structure. "Metrics in reports," Display & Video 360 Help, accessed December 19, 2023, <https://support.google.com/displayvideo/table/3187025?hl=en&sjid=4831193025971415257-NA> ("Platform Fee... The fees for using Display & Video 360").

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also paid more in platform fees to DSPs (DV360 and TTD) and Google Ads. The amount by which platform fees to the FAAs increased as a result of Google's alleged anticompetitive conduct also constitutes damages because the FAAs would not have paid the portions of the fees that constitute damages but for Google's allegedly anticompetitive conduct. That is, as the fees were based on the amount charged by AdX, reducing the AdX fee necessarily and mechanically reduces the platform fees in the but-for world.

## B. CALCULATIONS OF ADX OVERCHARGES

### 1. Calculation of AdX Actual Take for DV360, Google Ads, and TTD

64. [REDACTED]

65. [REDACTED]

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45 [REDACTED]

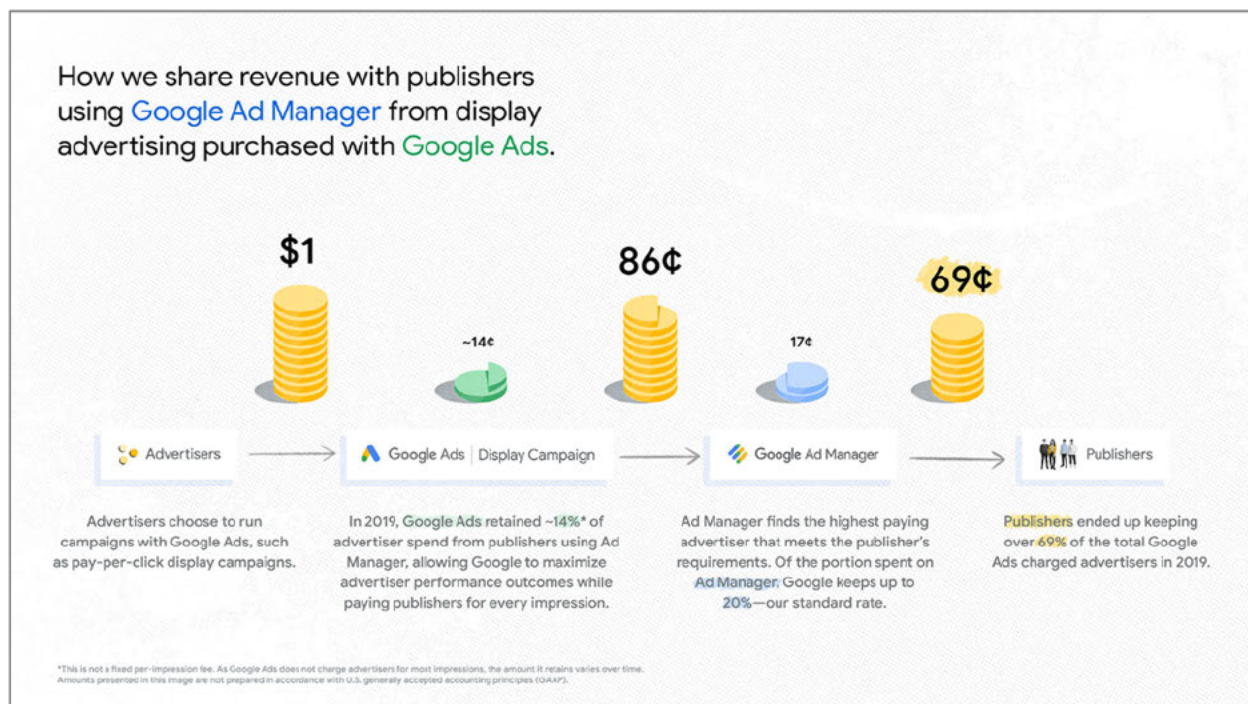
46 "Metrics in reports," Display & Video 360 Help, accessed December 19, 2023, <https://support.google.com/displayvideo/table/3187025?hl=en&sjid=4831193025971415257-NA> ("Platform Fee... The fees for using Display & Video 360").

[REDACTED]

47 "Metrics in reports," Display & Video 360 Help, accessed December 19, 2023, <https://support.google.com/displayvideo/table/3187025?hl=en&sjid=4831193025971415257-NA> ("Media cost is the raw cost for impressions purchased from an exchange.").

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Figure 12: Google Ads Revenue Share (Excerpt from Google Website)



<sup>48</sup> Google Ad Manager is the result of Google merging AdX and DoubleClick for Publishers (“DFP”). Sridhar Ramaswamy, “Introducing simpler brands and solutions for advertisers and publishers,” Google, June 27, 2018, <https://blog.google/technology/ads/new-advertising-brands/> (“[F]or the last three years, we’ve been working to bring together DoubleClick for Publishers and DoubleClick Ad Exchange in a complete and unified programmatic platform under a new name—Google Ad Manager.”).

<sup>49</sup> Sissie Hsiao, “How our display buying platforms share revenue with publishers,” Google Ad Manager Blog, June 23, 2020, accessed December 13, 2023, <https://blog.google/products/admanager/display-buying-share-revenue-publishers/>.

chose to rely on the Google Ad Manager Blog because it was publicly available and therefore likely to have been scrutinized by Google prior to being published.

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Source: Sissie Hsiao, "How our display buy platforms share revenue with publishers," Google Ad Manager, June 23, 2020, <https://blog.google/products/admanager/display-buying-share-revenue-publishers/>.

66. 

67. **Figure 13** shows the AdX Actual Take on transactions for worldwide advertisers, U.S. advertisers, and all U.S. government agencies through DV360 and Google Ads (broken out by the industry sector in which the advertisers operate<sup>52</sup>) during the Damages Period. **Figure 14** shows AdX Actual Take for FAAs and other U.S. government agencies. (Other U.S. government agencies include non-FAA Department of Defense agencies, such as the Marines and the Coast Guard, and other government agencies such as the Central Intelligence Agency, National Park Service, and Internal Revenue Service.) **Figure 13** and **Figure 14** include only the AdX Actual Take for transactions through DV360 and Google Ads. (TTD and other 3P DSPs did not produce non-FAA buying information regarding their worldwide, United States, and other U.S. government agency transactions.)

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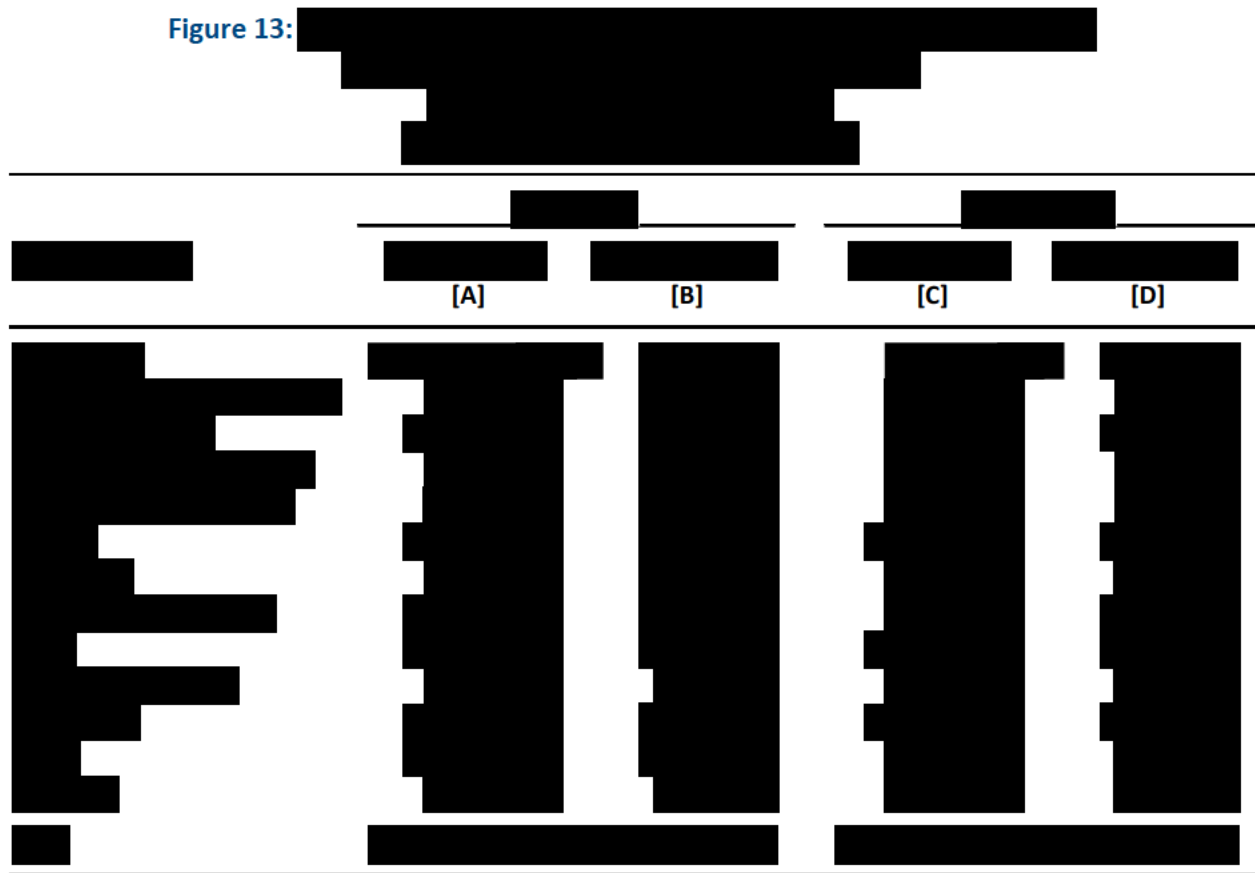
<sup>50</sup> The Trade Desk invoices are divided into Media Cost, Data Cost, Feature Cost, and TTD Fee. I describe my sampling methodology and the invoices included in my sample in **Appendix C**.

<sup>51</sup> The AdX Take Rate is assumed to be the sum of AdX Actual Take over the sum of Media Cost for in scope purchases through DV360. Google Ads was not included in the estimation of the AdX Take Rate for TTD transactions as no exact AdX Actual Take was available in the data.

<sup>52</sup> 

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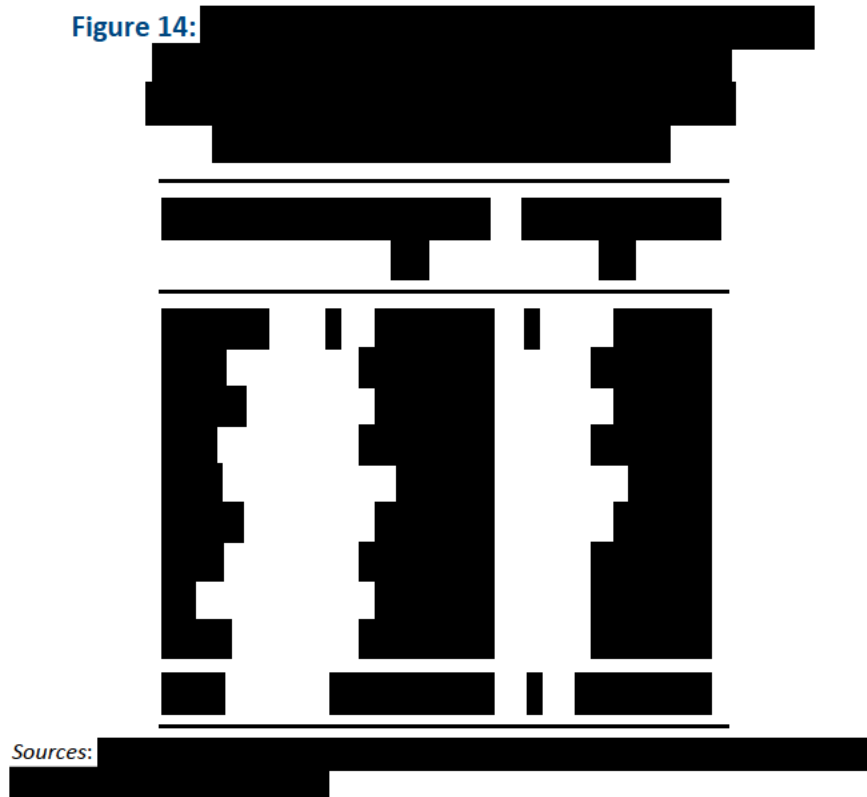
Figure 13:



Sources:

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Figure 14:



## 2. Overcharge to Worldwide, U.S., and All U.S. Government Agency Advertisers and Publishers

68. Dr. Simcoe has constructed scenarios in which he estimates the AdX But-For Take Rate absent Google's anticompetitive conduct. The United States has asked me to use the following AdX But-For Take Rates from Dr. Simcoe's Figure 22: 16.2 percent or 16.6 percent on amounts flowing into AdX (*e.g.*, AdX Revenues).<sup>53</sup> In addition, the United States has instructed me to use an alternative AdX But-For Take Rate of 10 percent.

69. In **Figure 15** below, I show how much AdX overcharged worldwide advertisers and publishers, U.S. advertisers and publishers, and U.S. government agency advertisers (including but not limited to the eight FAAs) and their publishers. I determine the AdX But-For Take by multiplying the AdX Revenues by the AdX But-For Take Rate. I then determine the AdX

<sup>53</sup> Simcoe Report, Figure 22, column [D] for estimates relating to all exchanges for both comparables (16.2 percent) and event study (16.2 percent and 16.6 percent). I estimate damages on the remaining but-for take rates from Simcoe Figure 22 in **Appendix D, Figure 38**.

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Overcharge by subtracting the AdX But-For Take from the AdX Actual Take. As a reminder, here are the formulas again:

$$\text{AdX But-For Take} = \text{AdX Revenues} \times \text{AdX But-For Take Rate}$$

$$\text{AdX Overcharge} = (\text{AdX Actual Take} - \text{AdX But-for Take}) \times 99\%$$

**Figure 15:**

	Т	Т	Т

*Sources:*

70. I calculate that AdX overcharged worldwide advertisers and publishers an amount ranging from [REDACTED] to [REDACTED] during the Damages Period for transactions through DV360 and Google Ads.

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71. I similarly calculate that the AdX Overcharge to advertisers based in the United States and their publishers and to U.S. government agencies and their publishers ranges from [REDACTED] to [REDACTED] and from [REDACTED] to [REDACTED], respectively.

### **C. DAMAGES TO THE FAAs**

#### **1. AdX Overcharge to FAAs**

72. **Figure 16** shows a summary of my calculations of AdX Revenues and the AdX Actual Take for each of the FAA Purchase Pathways included in my damages analysis. I also include the amounts of platform fees Google retained for each FAA Purchase Pathway.



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Figure 16: [REDACTED]

Case	Age	Sex	Occupation	History of Trauma	Current Symptoms	Diagnosis	Treatment	Outcome
1	25	Male	Construction Worker	Yes	Depression, Anxiety	Major Depressive Disorder	Antidepressants, Therapy	Improved
2	35	Female	Teacher	No	Depression, Anxiety	Major Depressive Disorder	Antidepressants, Therapy	Improved
3	45	Male	Police Officer	Yes	Depression, Anxiety	Major Depressive Disorder	Antidepressants, Therapy	Improved
4	55	Female	Homemaker	No	Depression, Anxiety	Major Depressive Disorder	Antidepressants, Therapy	Improved
5	65	Male	Retired	No	Depression, Anxiety	Major Depressive Disorder	Antidepressants, Therapy	Improved
6	75	Female	Widow	No	Depression, Anxiety	Major Depressive Disorder	Antidepressants, Therapy	Improved
7	85	Male	Widow	No	Depression, Anxiety	Major Depressive Disorder	Antidepressants, Therapy	Improved
8	95	Female	Widow	No	Depression, Anxiety	Major Depressive Disorder	Antidepressants, Therapy	Improved
9	105	Male	Widow	No	Depression, Anxiety	Major Depressive Disorder	Antidepressants, Therapy	Improved
10	115	Female	Widow	No	Depression, Anxiety	Major Depressive Disorder	Antidepressants, Therapy	Improved

Sources: [REDACTED]

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73. In **Figure 17** below, I show how much AdX overcharged the FAAs. I determine the AdX But-For Take by multiplying AdX Revenues by the AdX But-For Take Rate. I then determine the AdX Overcharge by subtracting the AdX But-For Take from the AdX Actual Take. As a reminder, here are the formulas again:

$$\text{AdX But-For Take} = \text{AdX Revenues} \times \text{AdX But-For Take Rate}$$

$$\text{AdX Overcharge} = (\text{AdX Actual Take} - \text{AdX But-for Take}) \times 99\%$$

74. As discussed above, the AdX Overcharge was borne by both advertisers and publishers. I understand that Dr. Simcoe estimates that advertisers bore 19.3 percent of the AdX Overcharge. Therefore, I do an additional calculation where I multiply the AdX Overcharge by the Advertiser Share to compute the fraction of the AdX Overcharge borne by the FAA advertisers to arrive at the AdX Overcharge to FAAs:

$$\text{AdX Overcharge to FAAs} = \text{AdX Overcharge} \times 19.3\%$$

75. **Figure 17** shows a summary of total damages for all FAAs. **Figure 17** shows that AdX overcharged the FAAs a total of [REDACTED]

[REDACTED] **Appendix D** shows damages amounts for each FAA. **Appendix D** also shows how damages change with different but-for take rates and Advertiser Shares. [REDACTED]

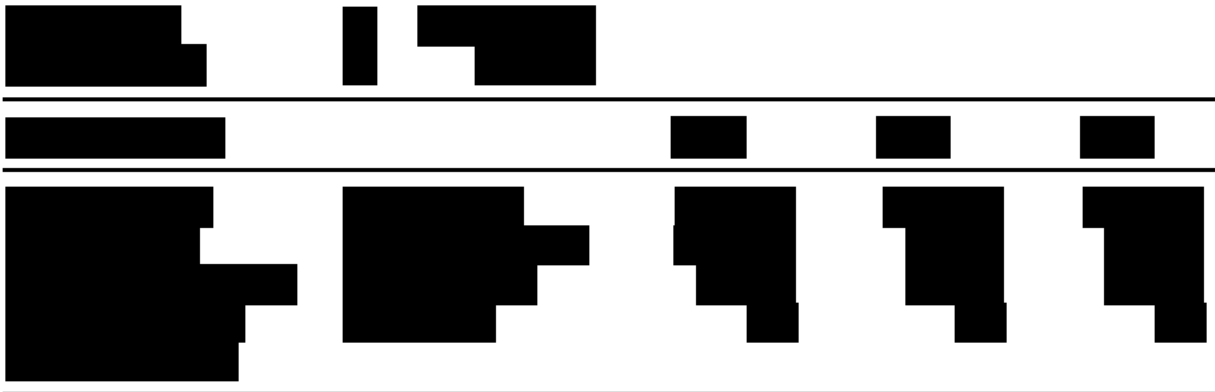
[REDACTED] In the next section of this report, I calculate additional damages stemming from increased platform fees resulting from the AdX Overcharge.

54

55

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Figure 17:



Sources:

## 2. Platform Fees Overcharge Resulting from AdX Overcharge

76. As a result of Google's alleged anticompetitive conduct, advertisers also paid more in platform fees to DSPs (DV360 and TTD) and Google Ads ("Platform Fees Overcharge"). This is because DSPs and Google Ads charged platform fees based on a percentage of the amounts of AdX Revenues. If AdX Revenues had been lower, then platform fees would also have been lower.

77. In **Figure 18**, I compute the Platform Fees Overcharge to the FAAs during the Damages Period for transactions through DV360 and Google Ads. [REDACTED]

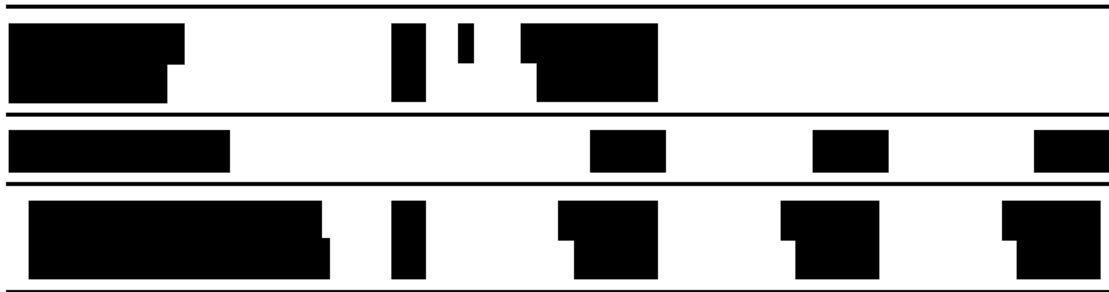
For each scenario of an AdX But-For Take Rate, I show the AdX Overcharge to FAAs. Assuming that the actual percentage of platform fees as a fraction of AdX Revenues would have remained constant absent the AdX Overcharge,<sup>57</sup> I multiply this percentage by the AdX Overcharge to the FAAs to arrive at the amount by which platform fees increased due to the AdX Overcharge. This increase is the Platform Fees Overcharge to the FAAs.

<sup>56</sup> [REDACTED]

<sup>57</sup> I understand that DSPs/ad networks and ad exchanges are separate markets. Complaint, ¶ 279 ("Google's conduct at issue in this Complaint implicates three relevant antitrust markets in the United States: publisher ad servers, ad exchanges, and advertiser ad networks.").

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Figure 18:



A table with four rows and four columns. All data is redacted with black boxes.

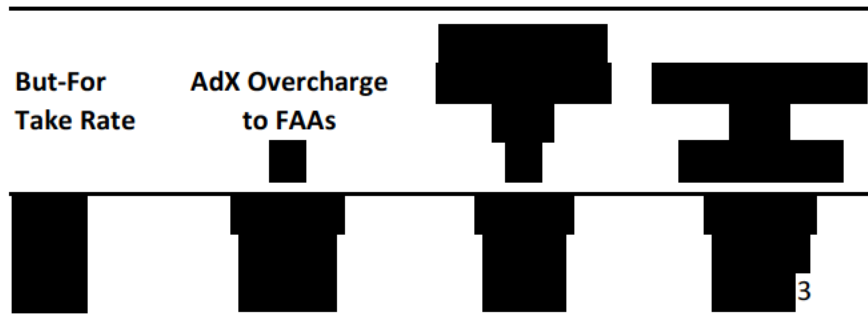
Sources:

[Redacted source text]

### 3. Summary of Damages to FAAs

78. **Figure 19** below is a summary of damages to the FAAs.

Figure 19:



A table with four columns. The first two columns are labeled 'But-For Take Rate' and 'AdX Overcharge to FAAs'. The last two columns are redacted. The table contains four rows of data, all of which are redacted.

Sources:

[Redacted source text]

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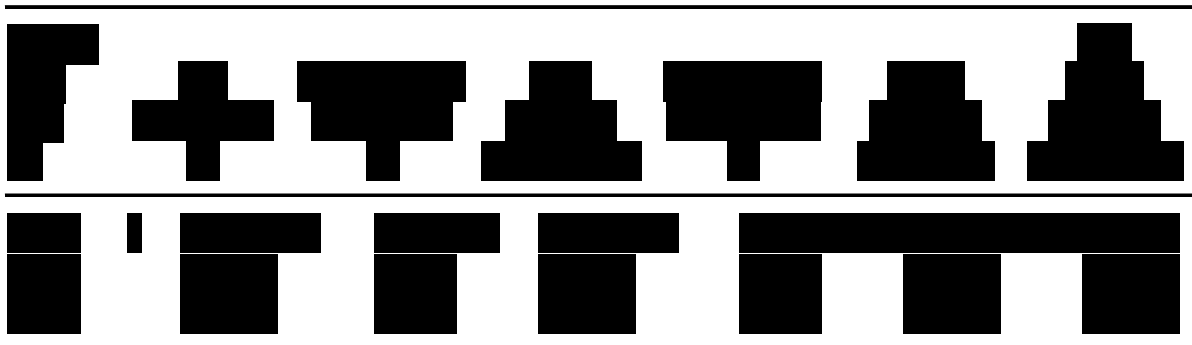
## VIII. Prejudgment Interest

79. I understand that the court may rule that the United States is entitled to prejudgment interest (“PJI”) in this matter, which is “simple interest on actual damages for the period beginning on the date of service of the pleading... and ending on the date of judgment[.]”<sup>58</sup> The United States has instructed me to calculate prejudgment interest using the weekly average 1-year constant maturity Treasury yield as published by the Board of Governors of the Federal Reserve System.

80. I calculate prejudgment interest from January 24, 2023 (the date of service of the complaint) through June 30, 2024, a hypothetical judgment date. I use actual interest rates available through the date of this report. For the time period between the date of this report and the hypothetical judgment date, I do not have actual interest rates, so I use the last actual interest rate published prior to the date of this report.

81. In addition to prejudgment interest, I understand that the United States is also entitled to treble damages.<sup>59</sup> **Figure 20** summarizes the results of my calculations for prejudgment interest and treble damages below:

**Figure 20:** [REDACTED]



Sources: Federal Reserve H.15 Selected Interest Rates, accessed December 15, 2023.

Note: Prejudgment interest is based on total damages for the period, not treble damages.

<sup>58</sup> 15 U.S.C. § 15a.

<sup>59</sup> *Id.* (“Whenever the United States is hereafter injured in its business or property by reason of anything forbidden in the antitrust laws it may sue therefor in the United States district court for the district in which the defendant resides or is found or has an agent, without respect to the amount in controversy, and shall recover threefold the damages by it sustained and the cost of suit.”).

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## IX. Profitability Analysis

82. In this section, I discuss how Google compiles profitability analyses of its ad tech businesses in the ordinary course of business. Based on Google's own analyses, I then construct profitability analyses that show estimates of the profitability of portions of Google's ad tech stack.

A. [REDACTED]

83. Externally, Alphabet, Inc. presents its financials in three reporting segments: Other Bets (which includes all its moonshot initiatives), Cloud (which includes its cloud business), and Google Services (which includes all other businesses such as Google's advertising, hardware, platforms, and other businesses).<sup>60</sup> [REDACTED]

84. [REDACTED]

---

<sup>60</sup> Alphabet Inc. 2022 10-K, at p. 82 ("We report our segment results as Google Services, Google Cloud, and Other Bets . . . Google Services includes products and services such as ads, Android, Chrome, hardware, Google Maps, Google Play, Search, and YouTube . . . Google Cloud includes infrastructure and platform services, collaboration tools, and other services for enterprise customers . . . Other Bets is a combination of multiple operating segments that are not individually material.").

61 [REDACTED]

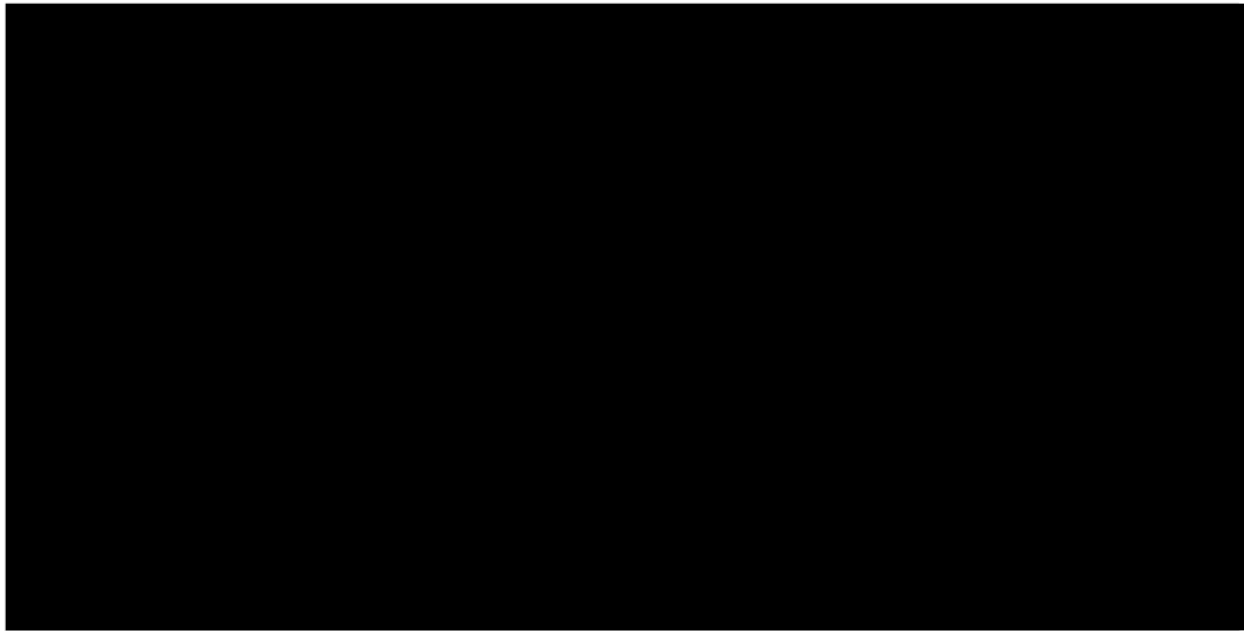
<sup>62</sup> A complex organization requires hierarchy to organize and manage its business activities. In order to do so, many companies organize themselves into segments. A segment can be defined as "any part or activity of an organization about which a manager seeks cost, revenue, or profit data." See Garrison Ray, Eric Noreen, and Peter Brewer, *Managerial Accounting* 17th ed. (McGraw Hill, 2021) at p. 250. Internal financial reports are not required to conform with GAAP, though internal and external reporting is often similar.

63 [REDACTED]

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85. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Figure 21: [REDACTED]



Source: [REDACTED]

1. [REDACTED]

86. Companies create and use P&Ls of segments and sub-segments to assess their financial performance in order to make various decisions, such as how to allocate resources and how to award bonuses within and across segments and sub-segments. [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]

---

64 [REDACTED]

65 [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

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Figure 22: [REDACTED]

[REDACTED]	
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

---

66 *Id.*

67 [REDACTED]

68 [REDACTED]

69 [REDACTED]

70 [REDACTED]

71 Jonathan Berk and Peter DeMarzo, *Corporate Finance*, 4th ed. (Pearson, 2016) at p. 63 (“Gross Profit. The first two lines of the income statement list the revenues from sales of products and the costs incurred to make and sell the products. Cost of sales shows costs directly related to producing the goods or services being sold, such as manufacturing costs. . . . The third line is gross profit, which is the difference between sales revenues and the costs.”) (emphasis removed).

72 [REDACTED]



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[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

87. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

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<sup>73</sup> Jonathan Berk and Peter DeMarzo, *Corporate Finance*, 4th ed. (Pearson, 2016) at p. 69 (“The gross margin of a firm is the ratio of gross profit to revenues (sales).”) (emphasis removed).

<sup>74</sup> *Id.* at p. 63 (“Operating Expenses . . . are expenses from the ordinary course of running the business that are not directly related to producing the goods or services being sold. They include administrative expenses and overhead, salaries, marketing costs, and research and development expenses.”) (emphasis removed).

<sup>75</sup> *Id.* at p. 63 (“The firm’s gross profit net of operating expenses is called operating income.”) (emphasis removed).

<sup>76</sup> *Id.* at p. 69 (“Because there are additional expenses of operating a business beyond the direct costs of goods sold, *another* important profitability ratio is the operating margin, the ratio of operating income to revenues.”) (emphasis removed).

<sup>77</sup> [REDACTED]

HIGHLY CONFIDENTIAL

Figure 23:

[illegible]

*Sources:*

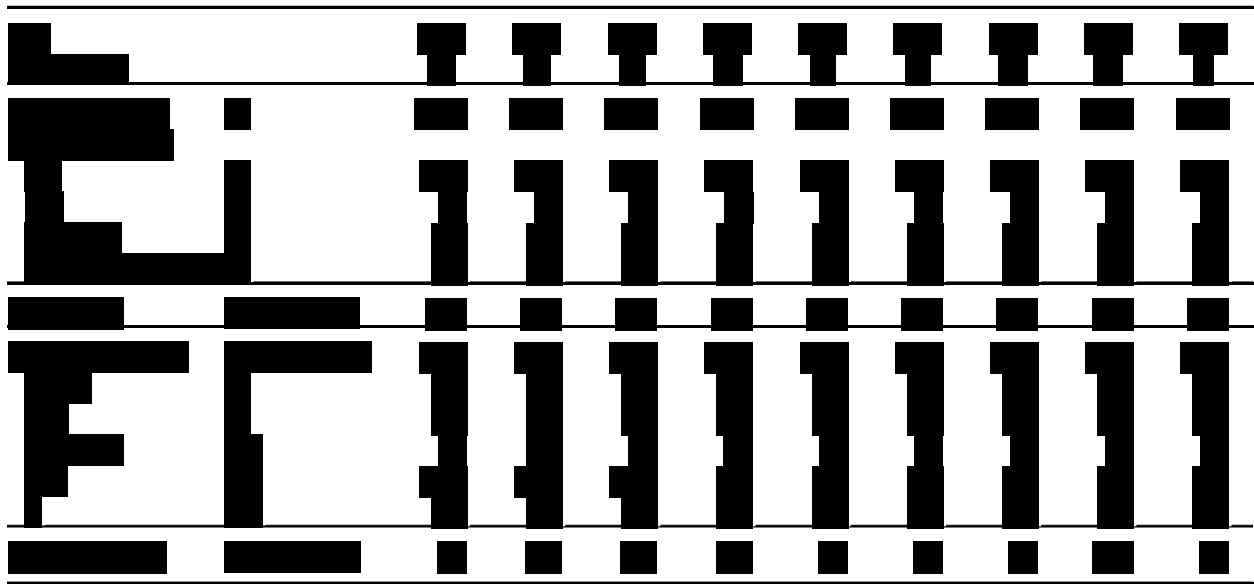
88.

78

<sup>79</sup> Roman L. Weil, Katherine Schipper, and Jennifer Francis, *Financial Accounting: An Introduction to Concepts, Methods and Uses*, 14th ed. (Cengage Learning, 2012) at p. 752. (“**common-size statement; common-size balance sheet; common-size income statement** A percentage statement usually based on total assets (balance sheet) or net sales or revenues (income statement).”) (emphasis in original).

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Figure 24: [REDACTED]



Sources: [REDACTED]

[REDACTED]

89. A common size analysis is especially valuable in discerning trends over time. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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2.

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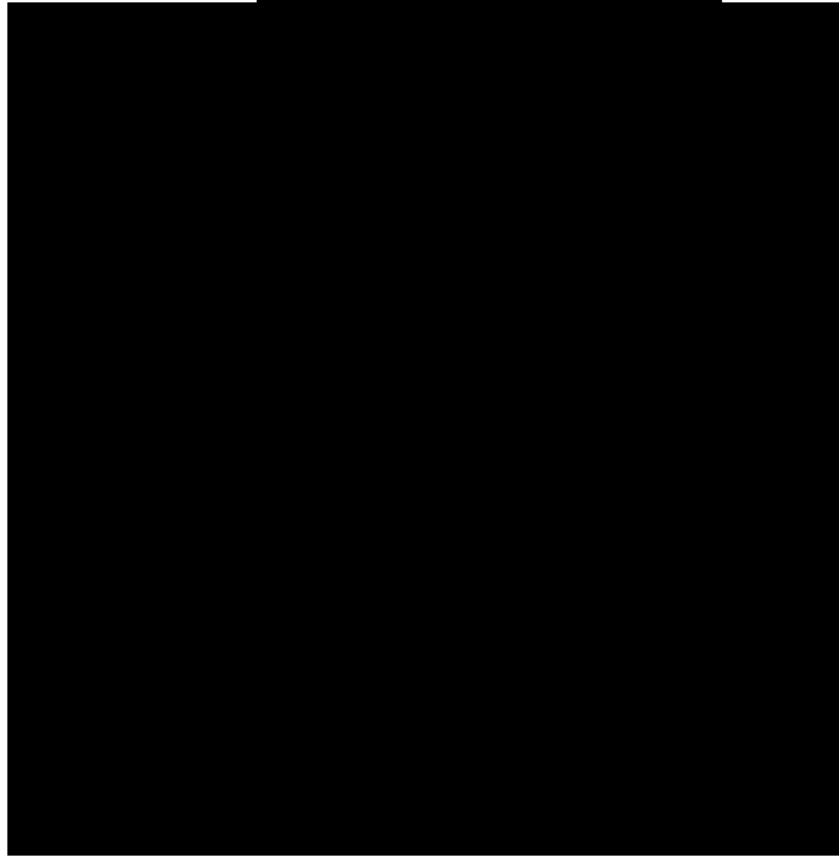
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Figure 25:



b.

[Redacted text]

92.

[Redacted text block]

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82

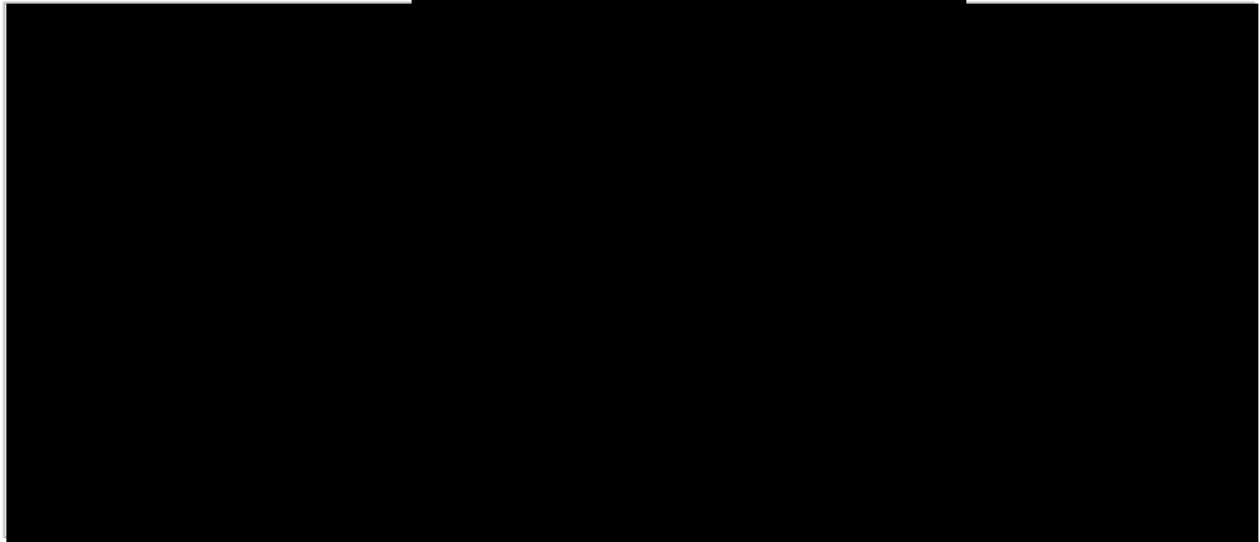
[Redacted text]

83

[Redacted text block]

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Figure 26:



93.

[REDACTED]

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Figure 27:

## Example - GBO costs (2021 Figures)

2021 Buyside View						
	App Promo	DV360	CM360	Google Ads	AdX Buyers	Total
GBO	224	547	127	310	122	1,330
Direct	172	415	127	143	52	909
Indirect	52	132	0	167	70	421

2021 MECE View of DVAA							
	AdMob	AdSense	Ad Manager	Google Ads	DV360	CM360	Totals
GBO	54	47	370	284	429	117	1,330

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[REDACTED]

96. [REDACTED]

97. [REDACTED]

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87 [REDACTED]

88 [REDACTED]

89 [REDACTED]

90 [REDACTED]



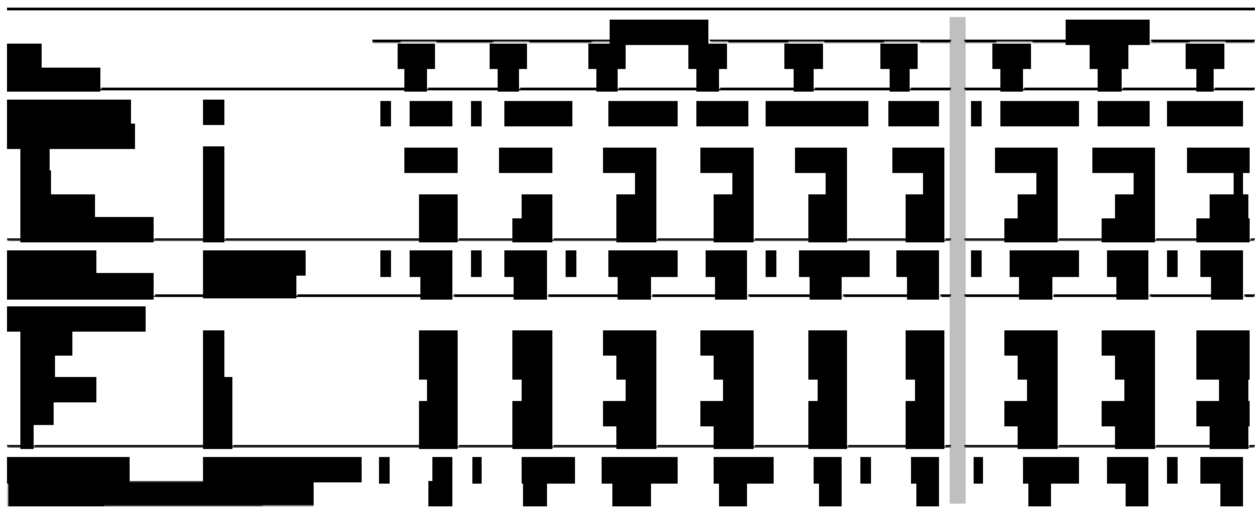
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2. [REDACTED]

98. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

99. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Figure 28: [REDACTED]



91 [REDACTED]  
[REDACTED]

92 [REDACTED]  
[REDACTED]  
[REDACTED]

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*Sources:*

100.

### 3.

a.

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ccounting Standards Codification (“ASC”) 606-10-55-36 (“When another party is involved in providing goods or services to a customer, the entity should determine whether the nature of its promise is a performance obligation to provide the specified goods or services itself (that is, the entity is a principal) or to arrange for those goods or services to be provided by the other party (that is, the entity is an agent).” ASC is the codification of accounting standards into a single source of authoritative Generally Accepted Accounting Principles (GAAP) to be applied by nongovernmental entities.

94

ASC 606-10-55-37B (“When (or as) an entity that is a principal satisfies a performance obligation, the entity recognizes revenue in the gross amount of consideration to which it expects to be entitled in exchange for the specified good or service transferred.”).

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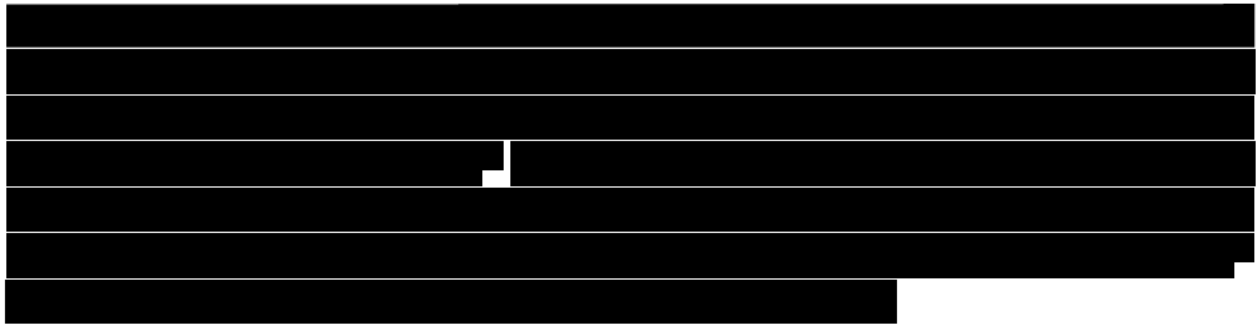
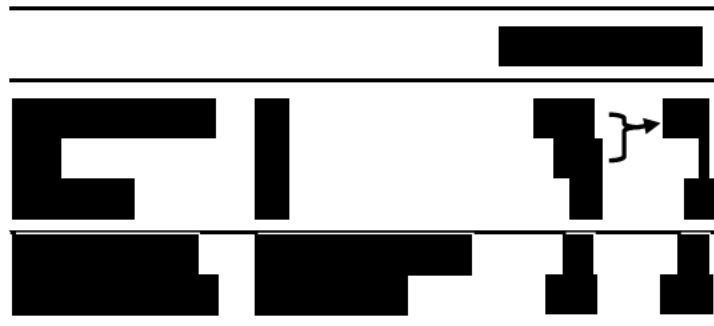


Figure 29:



103.

[REDACTED]

[REDACTED] See also, Mok Deposition at 43:16 – 20 (“Q And is Google ever an agent? A Yes. Q Under what circumstances? A Programmatic guaranteed transactions, preferred deal transactions, and some exchange bidding transactions.”).

<sup>95</sup> ASC 606-10-55-38 (“When (or as) an entity that is an agent satisfies a performance obligation, the entity recognizes revenue in the amount of any fee or commission to which it expects to be entitled in exchange for arranging for the specified goods or services to be provided by the other party. An entity’s fee or commission might be the net amount of consideration that the entity retains after paying the other party the consideration received in exchange for the goods or services to be provided by that party.”).

<sup>96</sup>

[REDACTED]

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104. The determination of whether an entity is a principal or an agent is a complex accounting judgment which has significant consequences with regard to the computation of the entity's profit margins. The principal-agent assessment is a two-step process. The first step is to *identify the specified goods or services* to be provided to the customer.<sup>97</sup> [REDACTED]

105. The second step is to assess whether Google has *control* over that specified good or service before it is transferred to the customer.<sup>100</sup> Under GAAP, an entity is a *principal* if it controls the specified good or service before that good or service is transferred to a customer.<sup>101</sup> Conversely, "An entity is an agent if the entity's performance obligation is to arrange for the provision of the

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<sup>97</sup> ASC 606-10-55-36A ("To determine the nature of its promise (as described in paragraph 606-10-55-36), the entity should: a. Identify the specified goods or services to be provided to the customer (which, for example, could be a right to a good or service to be provided by another party [see paragraph 606-10-25-18]).")

<sup>98</sup> [REDACTED]

<sup>99</sup> [REDACTED]

<sup>100</sup> ASC 606-10-55-36A ("To determine the nature of its promise (as described in paragraph 606-10-55-36), the entity should: ...B Assess whether it controls (as described in paragraph 606-10-25-25) each specified good or service before that good or service is transferred to the customer.").

<sup>101</sup> ASC 606-10-55-37 ("An entity is a principal if it controls the specified good or service before that good or service is transferred to a customer.").

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specified good or service by another party.”<sup>102</sup> An agent does not control the specified good or service.<sup>103</sup>

106. In the accounting literature, “control” refers to the ability of the entity “to direct the use of, and obtain substantially all of the remaining benefits from the asset,” including “the ability to prevent other entities from directing the use of, and obtaining the benefits from, an asset.”<sup>104</sup> In considering “control,” an example here is instructive. For instance, Google’s role could be considered similar to the auction house Sotheby’s, who takes possession of art on consignment and serves as the exclusive agent for sellers to find buyers through the auction process.<sup>105</sup> Sotheby’s performs a number of activities in connection with its auction consignment agreement “which culminate[] in the creation of a public marketplace for the sale and purchase of art that, if successful, results in the matching of the seller to a buyer.”<sup>106</sup> If the sale is not completed because bidding does not reach a reserve price—a confidential minimum price agreed upon with the consignor—the sale is not completed and Sotheby’s is not due a commission.<sup>107</sup> Similarly, if a buyer defaults on a payment, the sale is cancelled and the property is returned to the consignor.<sup>108</sup> Despite serving as the exclusive agent for sellers to find buyers, Sotheby’s considers itself an agent in accounting for its auction activities.<sup>109</sup>

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<sup>102</sup> ASC 606-10-55-38 (“An entity is an agent if the entity’s performance obligation is to arrange for the provision of the specified good or service by another party.”).

<sup>103</sup> ASC 606-10-55-38 (“An entity that is an agent does not control the specified good or service provided by another party before that good or service is transferred to the customer.”).

<sup>104</sup> ASC 606-10-25-25. (“Control of an asset refers to the ability to direct the use of, and obtain substantially all of the remaining benefits from, the asset. Control includes the ability to prevent other entities from directing the use of, and obtaining the benefits from, an asset.”)

<sup>105</sup> See, e.g., Sotheby’s 2018 10-Q, at pp. 14-15.

<sup>106</sup> *Id.*, at p. 15.

<sup>107</sup> *Id.*, at p. 15 (“However, if the bidding for an individual artwork does not reach its reserve price (i.e., the confidential minimum hammer price at which the consignor has agreed to sell), the sale is not completed, and we are not entitled to collect a commission.”).

<sup>108</sup> *Id.*, at p. 16 (“Under the standard terms and conditions of our auction sales, we are not obligated to pay the consignor for property that has not been paid for by the buyer. If a buyer defaults on payment, the sale is cancelled, and the property is returned to the consignor.”).

<sup>109</sup> *Id.*, at p. 15 (“Accordingly, the consignor receives the benefit of our auction service only when the sale is completed, upon the fall of the auctioneer’s hammer, at which point in time we recognize our auction commission revenue.”).

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107. Similar to Sotheby's, once a publisher puts ad inventory available on one of Google's sell-side platforms, Google has an exclusive agreement with the publisher to perform activities that culminate in the matching of a publisher to an advertiser. Such an exclusive arrangement does not mean that Google has "control" or that Google is the principal in its auction activities.

108. GAAP also provides three indicators that an entity controls the good or service: (a) the entity has primary responsibility for fulfilling the promise to provide the good or service, (b) the entity has inventory risk, and (c) the entity has discretion in establishing the price.<sup>110</sup> While Google arguably does have primary responsibility for the promise to match ad inventory with advertisers, it does not meet the other two indicators. [REDACTED]

[REDACTED]

[REDACTED] Consistent with Sotheby's accounting treatment, it would be reasonable to conclude that Google was an agent in the at-issue transactions.

109. Indeed, other ad tech service providers, including Magnite Inc. and PubMatic, consider themselves to be *agents*, whereby they arrange for one party (the publisher) to provide a specified good or service to another party (the advertiser), *i.e.*, their role in display ad transactions is akin to that of a broker helping two parties make a deal.<sup>112</sup> Other companies that provide ad tech services

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<sup>110</sup> ASC 606-10-55-39.

<sup>111</sup> [REDACTED]

<sup>112</sup> ASC 606-10-55-36 ("When another party is involved in providing goods or services to a customer, the entity should determine whether the nature of its promise is a performance obligation to provide the specified goods or services itself (that is, the entity is a principal) or to arrange for those goods or services to be provided by the other party (that is, the entity is an agent)." Magnite, Inc. 2020 10-K, p. 47 ("We generate revenue from the purchase and sale of digital advertising inventory through our platform. We also generate revenue from the fee we charge clients for use of our Demand Manager product, which generally is a percentage of the client's advertising spending on any advertising marketplace. We recognize revenue upon the fulfillment of our contractual obligations in connection with a completed transaction, subject to satisfying all other revenue recognition criteria. For substantially all transactions executed through our platform, we act as an agent on behalf of the publisher that is monetizing its inventory, and revenue is recognized net of any advertising inventory costs that we remit to sellers."). Pubmatic discloses that it records revenue as an agent. *See* Pubmatic 2022 10-K, at p. 73 ("The Company has determined that it does not act as the principal in the purchase and sale of digital advertising inventory because it does not control

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also record revenue as agents.<sup>113</sup> [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

---

the advertising inventory and it does not set the price which is the result of an auction within the marketplace. Based on these and other factors, the Company reports revenue on a net basis.”).

<sup>113</sup> Criteo records revenue for its Criteo Marketing Solutions and certain revenue from the Criteo Retail Media segment as a principal while it records other revenue from the Criteo Retail Media segment and that from Iponweb as an agent. *See* Criteo S.A. 2022 10-K, at p. F-17 (“We act as principal in our Criteo Marketing Solutions arrangements because (i) we control the advertising inventory before it is transferred to our clients; (ii) we bear sole responsibility in fulfillment of the advertising promise and bear inventory risks and (iii) we have full discretion in establishing prices... We act either as principal or as agent in our Criteo Retail Media segment. For the arrangements related to transactions using our legacy Retail Media solutions, we consider that we act as principal, as we exercise significant control over the client’s advertising campaign. For arrangements related to transactions using our Platform, a self-service solution providing transparency, measurement and control to our brand, agency and retailer customers, we act as agent, because we (i) do not control the advertising inventory before it is transferred to our clients, (ii) do not have inventory risks because we do not purchase the inventory upfront and (iii) have limited discretion in establishing prices as we charge a platform fee based on a percentage of the digital advertising inventory purchased through the use of the platform... We act as agent in Iponweb provided solutions as we (i) do not control the advertising inventory before it is transferred to our clients, (ii) do not have inventory risks because we do not purchase the inventory upfront and (iii) have limited discretion in establishing prices as we charge a fee based on a percentage of the digital advertising inventory traded through our solutions.”).

Tremor, which purchased Amobee in September 2022, discloses that it records transactions as an agent. *See* “Tremor International Ltd 2022 Annual Report,” p. 47 (“The Company concluded that its Programmatic activity (i) does not have manual control over the process, (ii) the Company is not primarily responsible for fulfillment, (iii) the Company has no inventory risk and (iv) the Company obtains only momentary a title to the advertising space offered via the end-to-end platform. As a result, the Company reports its Programmatic business, tech stack, features, business models and activity as an agent and therefore presented revenue from Programmatic on a net basis.”).

<sup>114</sup> [REDACTED]

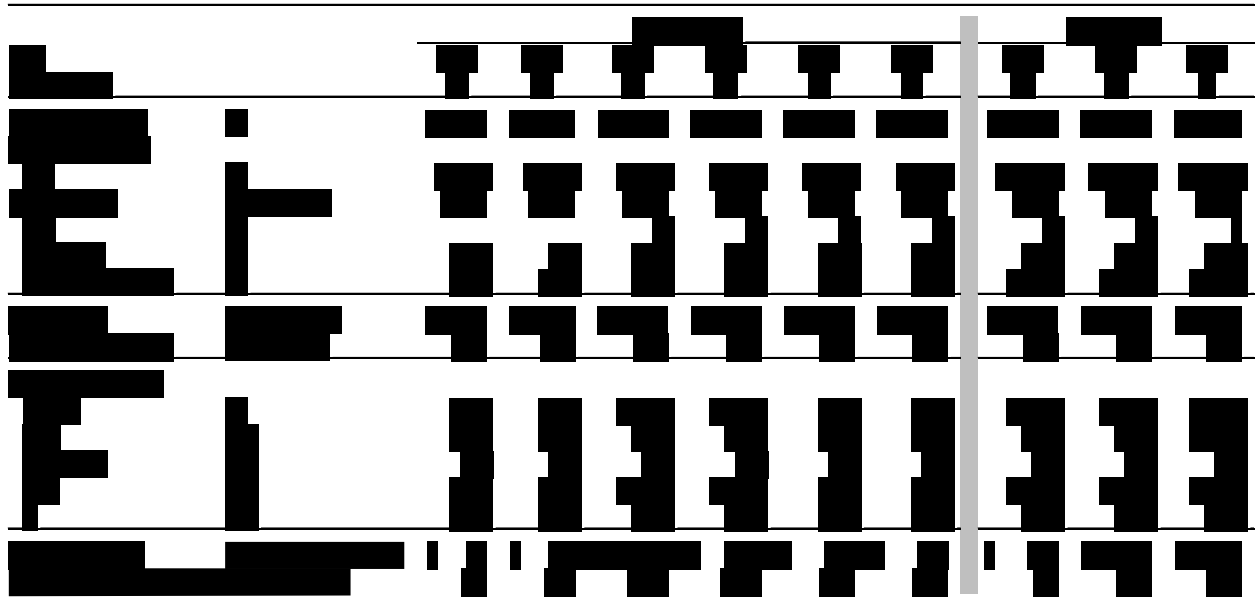
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[REDACTED]

b. [REDACTED]

110. [REDACTED]

Figure 30: [REDACTED]



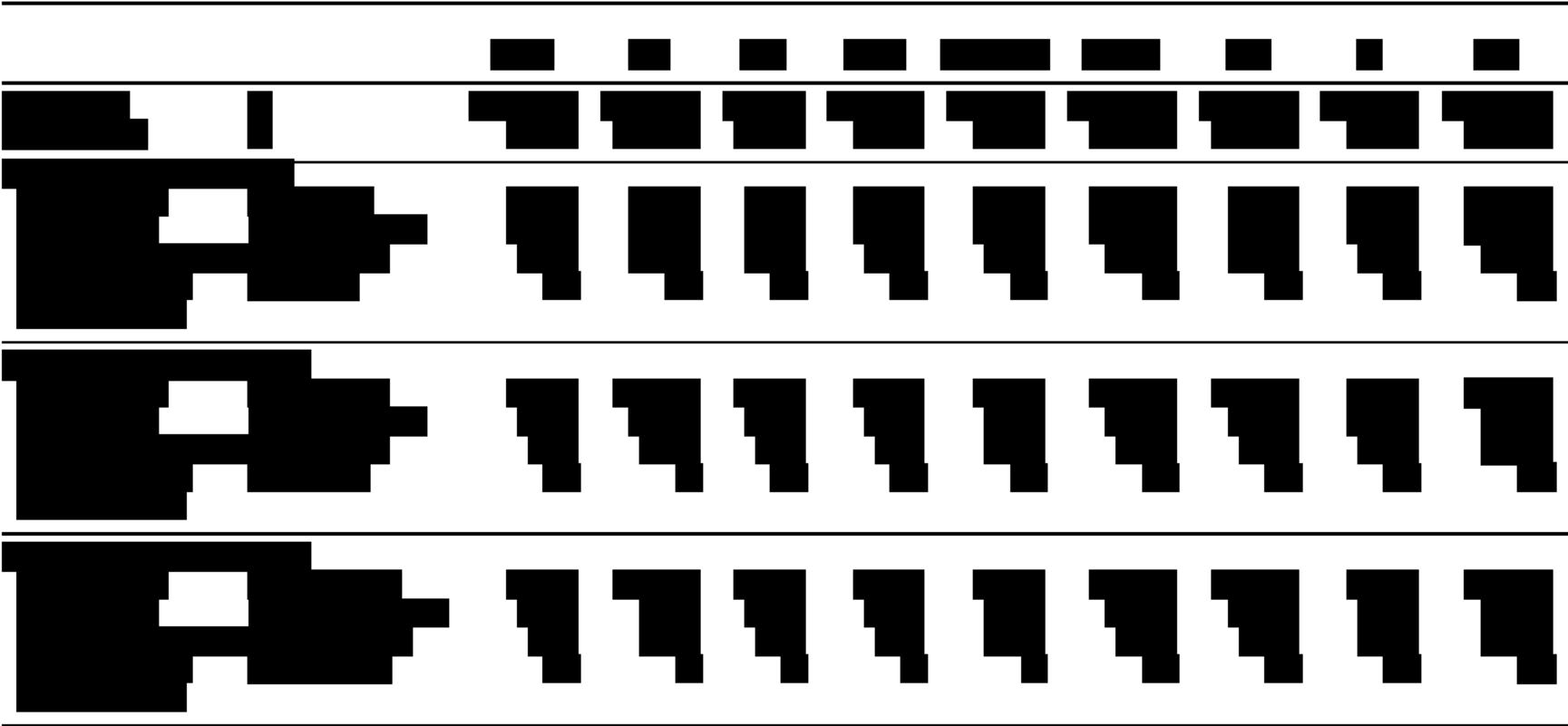
<sup>115</sup> *Id.*



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XIV.Appendix D: Supporting Figures

Figure 35: [REDACTED]



Sources: [REDACTED]

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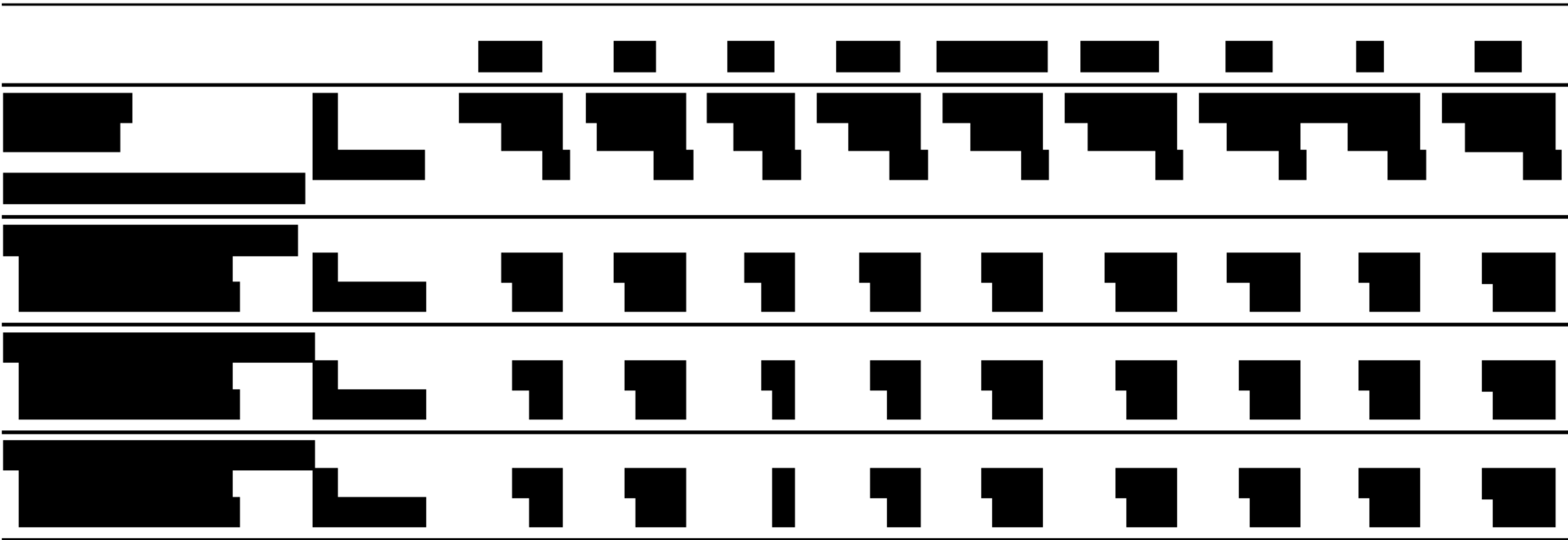
Figure 36: [REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Sources: [REDACTED]

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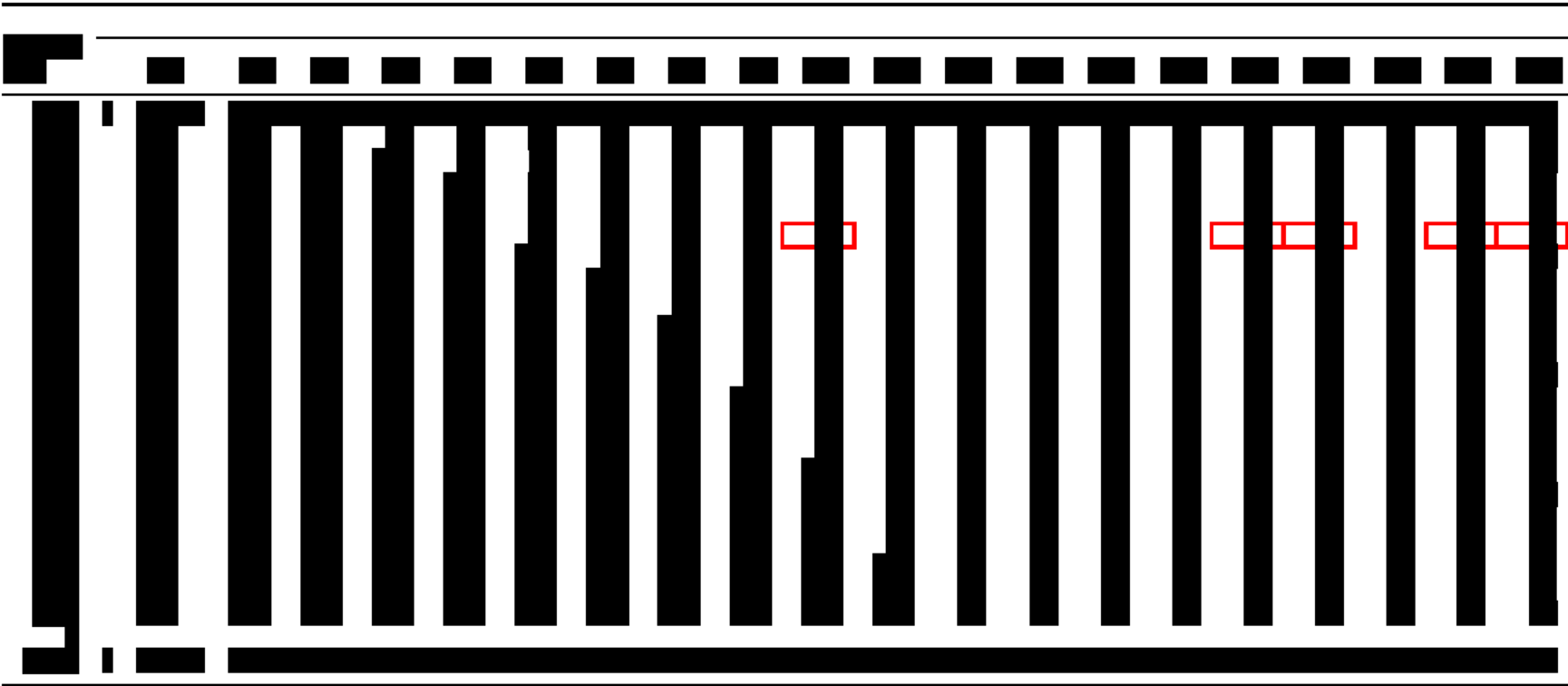
Figure 37: [REDACTED]



Sources: [REDACTED]

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Figure 38: Sensitivity [REDACTED]



Sources: [REDACTED]